

**Proposed BMPs
Modified From
Attachment to DNA #DOI-BLM-CO-S010-2011-93
S.E.Bayfield34-7-12U-3A
Gas Well and Pipeline**

SUIT FEIS “ROD” and PEA “DR” Management Requirements”

*Management Requirements for Implementation of the Agency and Tribal Preferred Alternative. Consult Attachment #1 (a 19 page document of the [SUIT EIS Record of Decision, October 2002](#) and [Attachment #2 to the SUIT Programmatic EA Decision Record and Finding of No significant Impact for 80 Acre Infill oil and Gas development on the Southern Ute Indian Reservation, July 28, 2009](#) for **minimum general requirements** that describes environmental protection measures for Oil and Gas operations on the Southern Ute Indian Reservation which are based on existing procedures, policies and regulations, as well as, new measures developed in the EIS and Programmatic EA processes). The measures therein and below are annotated to indicate their origin, and organized by resource in the same manner as in the EIS.*

Implementation of the Agency and Tribal Preferred Alternatives in the EIS and the PEA is **contingent upon compliance with those environmental protection requirements and site specific requirements from the onsite listed below.**

Site Specific Mitigations Identified through the Onsite Process

APD Conditions of Approval

(Result of “on-site” & the DNA process as provided for in the EIS/ROD and the PEA /DR):

In order to comply with the provisions of the SUIT EIS Record Of Decision and the SUIT PEA Decision Record, the following *mitigations* are attached to the approved APD, and pertain to the ***specific well pad (italic red type)*** and for all wells (**black normal type**), pipeline and access road actions proposed.

◆ **NO SURFACE DISTURBANCE** shall begin until the Edge of Disturbance Corners and Midline markers of the permitted area have been re-established and are clearly marked.

◆ **AIR QUALITY:** (Attachment #2 to Decision record of PEA)

◆ All new and replacement internal combustion gas field engines must meet, at minimum, recently promulgated (January 18, 2008 73FR3568 New Source Performance Standards NSPS (40CFR 60, Subpart JJJ) & shall emit no more than 1 gm of NO_x per HP hour. (See.)

◆ All prime mover diesel drilling rig engines must meet Tier 2 emission standards..

◆ **CLEAN WATER ACT:** EPA “Reasonable and Prudent Practices for Stabilization” Best Management practices shall be employed to control storm water and erosion.

◆ **HEALTH & SAFETY (SUIT FEIS 4.1.12.7)**

(Attachment #2 to Decision record of PEA)

• Oil and gas operators must provide **sanitary facilities within a 10 minute drive** of any given facility.

• **SPILLS** Appropriate notifications shall be made as required. Spills shall be contained immediately upon discovery, reclaimed as possible and contaminated soils removed.

• Retrieved “flowback” or “produced” waste water from hydraulic fracturing shall be injected into deep geological formations that are disconnected from overlying shallow potable water aquifers.

◆**LANDS USE- (SUIT FEIS Sec 4.6.8)** The contractor shall use Best Management Practices (BMP’s) to protect natural resources by eliminating or minimizing adverse impacts to the environmental public health and the natural resources to control storm water and erosion..

●The stripped topsoil (generally minimum 6-8”) shall be stockpiled separately and clearly marked for interim reclamation. Where soil is placed over *Temporary Use Areas* care must be taken so as not to disturb topsoil. A straw interface or comparable may be required to accomplish this.

●On roadway construction, topsoil must be salvaged where available during construction and re-spread to the greatest degree practical on cut slopes, fill slopes, and borrow ditches prior to seeding.

●*Fence crossings and irrigation ditch crossings are to be negotiated between the operator and the landowner. All irrigation ditches must be preserved (through the installation of culverts) to the satisfaction of the landowner. Required crossings noted include the following:*

<i>Approx.Station</i>	<i>Feature</i>	<i>Solution</i>
<i>Sta. 0+61</i>	<i>gate</i>	<i>Install gate provision in coordination with landowner</i>
<i>Sta.3+00</i>	<i>Irrig ditch</i>	<i>Min 18” adequate Culvert beneath road approx. 100’</i>
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<i>Sta. 9+20</i>	<i>2 gates</i>	<i>Install replacements in coordination with landowner.</i>
<i>Sta. 10+49</i>	<i>Irrig ditch</i>	<i>Min 18” adequate Culvert</i>
<i>Sta. 14+82</i>	<i>Irrig ditch 24”</i>	<i>Adequate minimum 24” dia. culvert.</i>

●**Interim Reclamation (SUIT-FEIS Sec4.6.8)**

Interim reclamation outside of the well-bore anchors to that area needed for routine maintenance and service with a graveled pull through shall be accomplished directly after the drilling of the well and reclamation of the cuttings trench. If areas of the pad or fill slopes have been graveled in anticipation of the construction phase, that gravel must be removed from all interim reclaimed areas including pad surface and developed slopes. The well pad shall be contoured (berms at top of fill slopes eradicated) to blend with the surrounding natural landscape. All topsoil shall be evenly spread on areas not on the graveled turnaround, soil prepared, stabilized, and seeded in the Fall or Spring with a BIA [or landowner] approved seed mix.

Topsoil segregated from stockpiled spoil shall be replaced during reclamation in its respective original position (last out, first in) to minimize mixing of soil horizons. Soil will be amended in accordance with reclamation plans and reseeded with BIA approved weed-free seed mix. Subsurface material should never be placed on top of topsoil material at any point in the operation (2007 Gold Book, p.17)

Vegetation and topsoil may require removal and stockpiling to enable workover operations to prevent soil compaction and mixing of material. If the interim reclaimed area is disturbed it shall again be reclaimed, as previously described.

●**Reclamation (43 CFR 3162.3-4, CFR3162.6 (d), Onshore Order #2)**

Final well reclamation: According to regulations, a well site is to be reclaimed and re-vegetated directly following plugging. The BLM-SJRA stipulates that surface reclamation be completed within 180 days of the final plugging operation. The final reclamation shall include all equipment and trash removal, slash piles chipped and scattered, pits, mouse hole, rat hole and boreholes filled, gravel removed, an identifying above ground marker erected (designating lease operator, lease number, API #, well name and number, plugging date) contoured to approximate original terrain as closely as possible, top soil evenly redistributed, soil prepared, weed control exercised, and soil seeded with a BIA approved seed mix which shall be monitored for growth. **The Bureau of Land Management, SJPLC (970.385.1370) shall be notified at least 48 hours prior to**

commencement of surface reclamation. The BIA-SU Agency shall be contacted prior to surface reclamation procedures for specific requirements and seed mixtures.

◆ **NOISE (SUIT FEIS 4.1.12.1):**

Mitigation as muffling, sound barriers, enclosures, alternative gas-lift mechanisms and topography shall be implemented as necessary on a case by case basis to bring into county standards compliance and to address specific annoyance complaints.

◆ **NOXIOUS WEEDS (SUIT FEIS 4.3.1.8):** on permitted lands areas shall be controlled for the life of the project.

◆ **PAD (WELL PAD) (SUIT FEIS Sec 4.1.5)**

Well site equipment shall be placed so that any production tanks are located close to the access road/pad junction and other facilities are clustered to enable maximum interim reclamation contraction of the well pad.

• **PAD/ACCESS/PIPELINE MITIGATION (SUIT FEIS Sec 4.1.5)**

Allow proper drainage to keep runoff precipitation from entering the well pad. The pad should be designed with a 1% slope emitting stormwater through a rock rundown trough passing through a temporary breach in the peripheral level pad dike (on all fill slopes)

• Access roads shall be bladed, crowned and ditched with appropriate minimum 18" culverts as needed and BMP erosion controls in place if well is successful. Roads shall be ditched on the high side with storm water runoff directed to existing drainages below the road through armored inlet and outlet culverts at flow line or suitably constructed Low Water Crossings. **All access roadways shall be constructed at an elevation higher than surrounding terrain. Adequate borrow ditches shall be constructed along the sides of the roads to facilitate storm water run-off. Culverts shall be placed at regular intervals where needed to allow water to cross the roadway and enter the existing drainages.**

• *Operator may use spoils to construct mandatory earthen dikes on the top of "fill" slopes of pad.*

• On pipeline ROWs, excavated topsoil shall be segregated from spoils. Upon backfilling, topsoil shall be placed on top, soils stabilized, prepared and seeded. Below applies as applicable:

1. All pipes shall be buried at a safe depth below existing culverts and 30" below scour line of arroyos.
2. Repair/replace all existing culverts removed to bury pipeline, armor inlets and outlets
3. Replace all borrow ditches impacted by construction.
4. Pipeline fill shall be compacted, mounded for settlement and finally seeded with a BIA /landowner specified seed mix.

• **Workover**

Any subsequent completions involving the drilling of a new lateral segment or other workover necessitating the use of a reserve pit or workover pit shall meet the requirements stipulated for a new well reserve pit. The pit floor shall be in undisturbed cut materials several feet above the ground water table, lined with an impermeable fabric of 12 mil or greater, diked, fenced, have fluids covered with bird netting and ultimately reclaimed within 180 days with fluids removed or solidified and fabric cut at mud line prior to back filling with 3' of clean soils.

◆ **SURFACE WATER- (SUIT FEIS Sec 4.5.2.8)**

• **Closed loop drilling systems** without reserve pits: *A closed loop system if approved shall store cuttings in a steel bin until hauled off to an approved land fill disposal site.*

A self contained mud system is approved and required by the BLM for this well. The mud system shall employ a rig-associated mud tank and a steel bin for collection of cuttings which shall be hauled to an approved disposal site.

• **Cuttings with >15,000 PPM Chloride or 10,000 PPM TPH must be removed from the Reservation and disposed of at an approved site. If cuttings are washed and centrifuged and tested at below Colorado State 910-1 table concentrations burial may be allowed on location with approval of a sundry notice to that effect submitted to the BLM.**

• **Partially self-contained drilling systems using a cuttings trench:** In the use of a cuttings trench, top soil/ spoils shall not be stored directly above a reserve pit or cuttings storage area *but may be positioned along cut pad edges or at grade level. A ditch to carry potential stormwater shall be constructed at the toe of cut slope between that slope and any* diked “cuttings storage area” or cuttings trench *to carry stormwater to grade off the pad over an armored area.*

During drilling operations a “temporary cuttings storage area” must be lined with a minimum 12 mil (24 mil if saline >15,000 Chloride, >10,000PPM TPH) minimum impermeable barrier and surrounded with a sufficient retaining dike whether the cuttings are held in a lined trench, a lined “drying bed” with side water collection channels, or against an earthen bank to decelerate foam cuttings above an excavated lined trench at the toe of the cuttings pile to collect fluids channeled or pumped into a lined storage trench.) Only dry cuttings and cement will be stored in the cuttings storage area. Any cement wash or other fluids shall not be mixed with dry cuttings, but must be placed in a self-contained tank and removed for disposal at an approved location. ***Any free liquid accumulating shall be vacuumed off consistently and removed to an approved facility.***

Upon completion of drilling operations, the cuttings shall be kept covered or removed as soon as possible. *Dry cuttings may be permanently buried in a lined cuttings trench located in cut material (pending Landowner approval on Fee lands). **Cuttings from this well may be buried onsite when dry.*** Alternatively, cuttings may be sampled for compliance with COGCC pit closure standards (Table 910-1). If all results meet closure standards, and are approved by the authorized officer via Sundry Notice 3160-5, the dry cuttings and cement may be buried in an unlined trench, located in cut material. The cuttings trench shall be maintained with 3’ of free board & covered with a minimum of three (3) feet of clean compacted backfill material during interim reclamation. *If the sampling option is exercised, laboratory reports showing compliance shall be submitted to the BLM and the SUIT-Environmental Programs Department.*

MINERAL OIL, Polymer additives, Saline Frac fluids or other non-fresh water based fluids stored on site to facilitate horizontal drilling/frac operations shall have adequate impermeable containment dikes with 24 mil minimum thickness fabric floor surrounding Storage Tanks to protect against potential spills. Any brine muds and liner placed within a cuttings storage pit or reserve pit shall be contained by impervious 30 mil liners and disposed of off reservation at an approved site.

• **Temporary slopes greater than 3:1** shall not exceed 2:1. **All pad fill slopes** shall be lined with continuous excelsior wattles at the top of fill slopes inside of a shallow (minimum 6-8”) ridge (dike) at the top of slope (or excelsior alone on graveled pads with secondary dikes around rig and tanks with spill potential) and excelsior wattles properly staked at the base of fill slopes to retain potential spills on location while drilling, to divert storm water away from the pad through a lowest elevation rock rundown to prevent sediment losses & shall have slope stabilization as needed. A ditch and dike shall be required at the top of cut slopes to prevent precipitation from entering the well pad. Long term temporary slopes shall be seeded. ***Construction slopes of 2:1 may be employed with reclamation to 3:1 upon interim reclamation. If of longer duration than 2 months “construction slopes” of 2:1 or steeper shall be stabilized with mechanically bonded fiber Matrix and seeded.***

- **Permanent pad slopes shall not exceed 3:1.** The **trough and minimal dike at the top edge of the fill slopes shall be lined with continuous securely staked excelsior wattles during well drilling & construction** and remain at the toe of fill slopes if needed to stabilize soil. This shall be maintained until vegetation growth stabilizes the fill slope. During interim reclamation the temporary stabilization and ditch/dike at the top of the fill slope may be removed as the pad is contoured to mimic surrounding terrain. Erosion inhibiting material as geo-textile matting, blankets, hydro-mulching, mechanically bonded fiber matrix, rip-rap (as required) and timely seeding with a BIA/landowner specified seed mix shall be applied as soon as pad construction is completed.

- A correctly installed silt fence or a continuous line of excelsior wattles (or similar retention device) shall be installed at the toe of “top soil” and “spoils storage” piles to prevent loss of soils. All disturbed slopes shall be seeded and stabilized. ***Topsoil should be placed on top of undisturbed soil. If topsoil is placed on top of gravel it must be placed on a layer of straw or other separation device so as not to mix gravel with topsoil.***

- **STORMWATER** a Storm Water Pollution Prevention Plan (SWPPP) is requested by the State of Colorado when proposing any ground disturbing activities of one (1) acre or greater.

- **Disposal of PRODUCED WATER: Onshore #7**

Shall not be stored in lined or unlined earthen pits but may be stored in steel tanks and disposed of at an approved site or piped to an approved water disposal well.

** Submit Sundry Notice of Intent to BLM for approval to dispose of water at an approved disposal site within 90 days. Include items: (1) From: (Well name), (2) Legal Loc, (3) API#, (4) Lease, (5) Fm, (6) Off Lease disposal well site? (a ROW is required from BIA), TO: (7) Inj well name, (8) UIC#, (9) Legal location of water disposal well.*

◆ **TES SPECIES (SUIT FEIS 4.3.3.9):**

If any TES species are identified during well construction or operation, the SUIT and the BIA shall be contacted immediately. Operations that would adversely affect the TES species must be discontinued until consultation with the USFWS indicates that the impacts are deemed “Not Likely to Effect”.

TES SPECIES (Attachment #2 to Decision record of PEA)

- No disturbance shall take place within 20 meters of federally listed plant occupied habitat. Any disturbance proposed within 200 meters of listed plants occupied habitat shall be analyzed in separate site specific consultation with the SUIT and the USFWS.

- Pre-construction surveys shall be conducted of proposed well pad and access route locations for **Gunnison prairie dogs**. Direct impacts to prairie dog colonies shall be avoided where possible and in the light of other resource tradeoffs resulting from access road and well pad relocation.

◆ **VISUAL RESOURCE MANAGEMENT: (SUIT FEIS 4.9.8)**

All static equipment shall be painted a non reflective environmental green color within seven (7) days of completion of construction as weather permits. The color shall be one shade darker than **background** vegetation (as “Beetle” Green) and may be selected by consulting the BLM Standard Environmental Colors Chart CC-001: June 2008.

◆ **WILDLIFE (SUIT FEIS 4.3.3.9):**

Avian species as birds and bats shall be protected from the enticement of warm vent stacks by wire grid or cone covers. Following well drilling during the liquid drying stage for reserve pits, **all pits** shall be fully fenced with bird netting suspended and maintained to protect migratory birds from potential hydrocarbons or toxic chemicals until reclamation is completed.

WILDLIFE (Attachment #2 to Decision record of PEA)

•Construction or other intrusive activities shall be prohibited within 0.5 miles from an **active raptor nest**. •New well locations and ROWs must be a minimum of 0.25 miles from a raptor nest or winter roost.

◆**Bald and Golden Eagle Protection Act: Attachment #2 to Decision record of PEA**

If a construction project is planned during the **bald eagle nesting period (March 16-July 1)** and within 0.5 miles of suitable bald eagle nesting habitat, a pre-construction survey must be initiated by a qualified biologist within 10 days prior to the start of construction to verify the presence or absence of bald eagle nesting activity. (See attachment 2 for survey protocol & compliance requirements on results.)

◆**Bald and Golden Eagle Protection Act: (Attachment #2 to Decision record of PEA)**

If a construction project is planned during the **bald eagle winter roosting** period (November 15-March 15) and within 0.25 mile of a riparian zone with mature cottonwood trees, a pre-construction survey shall be initiated by a qualified biologist within 10 days prior to the start of construction to verify the presence or absence of bald eagle roosting activity. (See attachment 2 for survey protocol & compliance requirements)

● **Migratory Bird Treaty Act: (Attachment #2 to Decision record of PEA)**

If construction is to occur during Migratory bird breeding season (March through August) a survey for Migratory birds **shall be made just prior to construction with activities** avoiding nesting/fledgling individuals discovered. The least amount of trench shall be left open overnight and escape routes from trenches provided for wildlife per USFWS recommendation (3/16/2004 letter) in consultation # 2-22-04-I-362.

● **Migratory Bird Treaty Act: (Attachment #2 to Decision record of PEA)**

•No surface disturbing activities disturbance shall take place within 200 meters of known or discovered occupied **Southwest willow flycatcher** breeding habitat May 1 – August 15.

DRAFT

Onsite:

- (1) A pipeline distance must be provided from pad edge to Center stake.
- (2) Level pad acreage shall be given. 0.55A?
- (3) Must pull E.D stakes in to actual slope development at 3:1. (approximately 10 feet from corners of well pad level surface). Permitted area should remain on Plat. E.D should be shown on plat with acreage. (Edges of disturbance to have toe of slope marked. "New Disturbance should be to toe of development slope.)

Permitted area = 0.97A?

Level pad 0.55A?

Pad with construction slopes to E.D. = new disturbance = ___A?

- (3) Pad must have perimeter containment dikes as stipulated in COAs, with rip-rapped temporary outlet for stormwater that can be closed in the event of a spill.

A landowner agreement for use and reclamation of the well pad/access and Operator certification that BLM has approval to inspect the well pad must be included with the APD.

Surface Construction Personnel Note

Appendix E

Attachment to DNA #DOI-BLM-CO-S010-2011-93

S.E. Bayfield 34-7-12U-3A

Gas Well and Pipeline

SUIT FEIS "ROD" and PEA "DR" Management Requirements"

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Site Specific Mitigations Identified through the Onsite Process

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(Result of "on-site" & the DNA process as provided for in the EIS/ROD and the PEA /DR):

In order to comply with the provisions of the SUIT EIS Record Of Decision and the SUIT PEA Decision Record, the following *mitigations* are attached to the approved APD, and pertain to the *specific well pad (italic red type)* and for all wells (**black normal type**), pipeline and access road actions proposed.

◆ **NO SURFACE DISTURBANCE** shall begin until the Edge of Disturbance Corners and Midline markers of the permitted area have been re-established and are clearly marked.

◆ **REQUIRED NOTIFICATIONS**

The BLM Minerals Division - Surface Protection Specialist shall be notified **5 days** prior to the onset of pad/road construction at 970-247-4874 or 970.385.1370.

The BLM Minerals Division shall be notified at least **48 hours** prior to commencement of interim and/or final surface reclamation activities at 970-247-4874 or 970.385.1370 (BLM) and 563-4780 (SUIT-Range).

◆ **AIR QUALITY:** (Attachment #2 to Decision record of PEA)

◆ All new and replacement internal combustion gas field engines must meet, at minimum, recently promulgated (January 18, 2008 73FR3568 New Source Performance Standards NSPS (40CFR 60, Subpart JJJ) & shall emit no more than 1 gm of NO_x per HP hour. (See.)

◆ All prime mover diesel drilling rig engines must meet Tier 2 emission standards..

◆ **CLEAN WATER ACT: EPA “Reasonable and Prudent Practices for Stabilization”** Best Management practices shall be employed to control storm water and erosion.

◆ **CULTURAL (SUIT FEIS Sec 4.8.9)** as specified
(Attachment #2 to Decision record of PEA). As prescribed.

◆ **HEALTH & SAFETY (SUIT FEIS 4.1.12.7)**

•The wellhead and equipment of existing well(s) shall be protected by effective barriers from inadvertent damage during construction of the new well.

(Attachment #2 to Decision record of PEA)

•Oil and gas operators must provide **sanitary facilities within a 10 minute drive** of any given facility.

•**SPILLS** Verbal Notification shall be made immediately and no later than 24 hours after the discovery of a breach of integrity. The company shall verbally report to the BLM within 24 hours spills of greater than 100 BBLs or greater than 500 MCF of gas. (There shall be a written report delivered to the BLM, Durango Office at 385-1370 or FAX 375-2338 within 10 days of the loss of greater than 10 BBLs of liquid or 50MCF gas). Spills shall be contained immediately upon discovery, reclaimed as possible and contaminated soils removed.

HYDRAULIC FRACTURING CONDITIONS OF APPROVAL REQUIREMENTS:

•The chemical formulas of the additives to the largely fresh-water fracturing fluid may be kept proprietary, but the constituents and gross volumes injected shall be disclosed to the BLM, BIA and the SUIT.

•Retrieved “flowback” or “produced” waste water from hydraulic fracturing shall be injected into deep geological formations that are disconnected from overlying shallow potable water aquifers.

◆ **LANDS USE- (SUIT FEIS Sec 4.6.8)** The contractor shall use Best Management Practices (BMP’s) to protect natural resources by eliminating or minimizing adverse impacts to the environmental public health and the natural resources to control storm water and erosion..

•The stripped topsoil (generally minimum 6-8”) shall be stockpiled separately and clearly marked for interim reclamation. Where soil is placed over **Temporary Use Areas** care must be taken so as not to disturb topsoil. A straw interface or comparable may be required to accomplish this.

•Tree stumps shall not be buried, but may be used for erosion control (See SUIT well site stipulations)

- On roadway construction, topsoil must be salvaged where available during construction and re-spread to the greatest degree practical on cut slopes, fill slopes, and borrow ditches prior to seeding.
- On any pre-existing well pad designed to host an additional wellbore, repairs shall be made to any erosion gullies on cut and fill slopes. Geo-textile blankets, hydro-mulch, mechanically bonded fibre matrix, or rip-rap shall be applied as required to control erosion. Slopes shall be seeded with a BIA approved seed mix.
- *Fence crossings and irrigation ditch crossings are to be negotiated between the operator and the landowner. All irrigation ditches must be preserved (through the installation of culverts) to the satisfaction of the landowner. Required crossings noted include the following:*

<i>Approx. Station</i>	<i>Feature</i>	<i>Solution</i>
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● **Interim Reclamation (SUIT-FEIS Sec4.6.8)**

Reserve pits shall be free of oil or other liquid and solid wastes, allowed to dry, water pumped out or mud solidified in-situ prior to backfilling. Reserve pit liner fabric shall be cut at the solids line and disposed off-reservation at an approved facility. The backfilled pit shall be covered with 3' of clean soil.

Interim reclamation outside of the well-bore anchors to that area needed for routine maintenance and service with a graveled pull through shall be accomplished directly after the drilling of the well and reclamation of the reserve pit/cuttings trench. If areas of the pad or fill slopes have been graveled in anticipation of the construction phase, that gravel must be removed from all interim reclaimed areas including pad surface and developed slopes. The well pad shall be contoured (berms at top of fill slopes eradicated) to blend with the surrounding natural landscape. All topsoil shall be evenly spread on areas not on the graveled turnaround, soil prepared, stabilized, and seeded in the Fall or Spring with a BIA approved seed mix. Excelsior at the base of fill slopes shall remain until vegetation stabilizes slopes.

Topsoil segregated from stockpiled spoil shall be replaced during reclamation in its respective original position (last out, first in) to minimize mixing of soil horizons. Soil will be amended in accordance with reclamation plans and reseeded with BIA approved weed-free seed mix. Subsurface material should never be placed on top of topsoil material at any point in the operation (2007 Gold Book, p.17)

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terrain as closely as possible, top soil evenly redistributed, soil prepared, weed control exercised, and soil seeded with a BIA approved seed mix which shall be monitored for growth. **The Bureau of Land Management, SJPLC (970.385.1370) shall be notified at least 48 hours prior to commencement of surface reclamation. The BIA-SU Agency shall be contacted prior to surface reclamation procedures for specific requirements and seed mixtures.**

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2. Repair/replace all existing culverts removed to bury pipeline, armor inlets and outlets
5. Replace all borrow ditches impacted by construction.
6. Pipeline fill shall be compacted, mounded for settlement and finally seeded with a BIA /landowner specified seed mix.

• **Lined pits:** All lined pits shall employ a 12 mil (24 mil liner for Saline muds) or heavier non-permeable fabric with any seams aligned vertically and having bedding material adequate to prevent potential puncturing by sharp rocks.

• **Workover**

Any subsequent completions involving the drilling of a new lateral segment or other workover **necessitating the use of a reserve pit or workover pit** shall meet the requirements stipulated for a new well reserve pit. The pit floor shall be in undisturbed cut materials several feet above the

ground water table, lined with an impermeable fabric of 12 mil or greater, diked, fenced, have fluids covered with bird netting and ultimately reclaimed within 180 days with fluids removed or solidified and fabric cut at mud line prior to back filling with 3' of clean soils.

◆SURFACE WATER- (SUIT FEIS Sec 4.5.2.8)

●DEWATERING OF RESERVE PITS

The operator is prohibited from using mechanically-aided evaporation techniques which involve the use of misters and/or sprayers to enhance removal of reserve pit fluids. On SUIT lands non saline cuttings may be buried with liner cut at solids level. On Fee lands cuttings that meet state standards may be buried without liner.

● **Closed loop drilling systems** without reserve pits: *A closed loop system if approved shall store cuttings in a steel bin until hauled off to an approved land fill disposal site.*

A self contained mud system is approved and required by the BLM for this well. The mud system shall employ a rig-associated mud tank and a steel bin for collection of cuttings which shall be hauled to an approved disposal site.

● **Cuttings with >15,000 PPM Chloride or 10,000 PPM TPH must be removed from the Reservation and disposed of at an approved site. If cuttings are washed and centrifuged and tested at below Colorado State 910-1 table concentrations burial may be allowed on location with approval of a sundry notice to that effect submitted to the BLM.**

● **Partially self-contained drilling systems using a cuttings trench**: In the use of a cuttings trench, top soil/ spoils shall not be stored directly above a reserve pit or cuttings storage area *but may be positioned along cut pad edges or at grade level. A ditch to carry potential stormwater shall be constructed at the toe of cut slope between that slope and any diked “cuttings storage area” or cuttings trench to carry stormwater to grade off the pad over an armored area.*

During drilling operations a “temporary cuttings storage area” must be lined with a minimum 12 mil (24 mil if saline >15,000 Chloride, >10,000PPM TPH) minimum impermeable barrier and surrounded with a sufficient retaining dike whether the cuttings are held in a lined trench, a lined “drying bed” with side water collection channels, or against an earthen bank to decelerate foam cuttings above an excavated lined trench at the toe of the cuttings pile to collect fluids channeled or pumped into a lined storage trench.) Only dry cuttings and cement will be stored in the cuttings storage area. Any cement wash or other fluids shall not be mixed with dry cuttings, but must be placed in a self-contained tank and removed for disposal at an approved location. *Any free liquid accumulating shall be vacuumed off consistently and removed to an approved facility.*

Upon completion of drilling operations, the cuttings shall be kept covered or removed as soon as possible. *Dry cuttings may be permanently buried in a lined cuttings trench located in cut material (pending Landowner approval on Fee lands). **Cuttings from this well may be buried onsite when dry.*** Alternatively, cuttings may be sampled for compliance with COGCC pit closure standards (Table 910-1). If all results meet closure standards, and are approved by the authorized officer via Sundry Notice 3160-5, the dry cuttings and cement may be buried in an unlined trench, located in cut material. The cuttings trench shall be maintained with 3' of free board & covered with a minimum of three (3) feet of clean compacted backfill material during interim reclamation. *If the sampling option is exercised, laboratory reports showing compliance shall be submitted to the BLM and the SUIT-Environmental Programs Department.*

MINERAL OIL, Polymer additives, Saline Frac fluids or other non-fresh water based fluids stored on site to facilitate horizontal drilling/frac operations shall have adequate impermeable containment dikes with 24 mil minimum thickness fabric floor surrounding Storage Tanks to protect against potential spills. Any brine muds and liner placed within a cuttings storage pit or reserve pit shall be contained by impervious 30 mil liners and disposed of off reservation at an approved site.

• **Temporary slopes greater than 3:1** shall not exceed 2:1. **All pad fill slopes** shall be lined with continuous excelsior wattles at the top of fill slopes inside of a shallow (minimum 6-8”) ridge (dike) at the top of slope (or excelsior alone on graveled pads with secondary dikes around rig and tanks with spill potential) and excelsior wattles properly staked at the base of fill slopes to retain potential spills on location while drilling, to divert storm water away from the pad through a lowest elevation rock rundown to prevent sediment losses & shall have slope stabilization as needed. A ditch and dike shall be required at the top of cut slopes to prevent precipitation from entering the well pad. Long term temporary slopes shall be seeded. ***Construction slopes of 2:1 may be employed with reclamation to 3:1 upon interim reclamation. If of longer duration than 2 months “construction slopes” of 2:1 or steeper shall be stabilized with mechanically bonded fiber Matrix and seeded.***

• **Permanent pad slopes shall not exceed 3:1.** The **trough and minimal dike at the top edge of the fill slopes shall be lined with continuous securely staked excelsior wattles during well drilling & construction** and remain at the toe of fill slopes if needed to stabilize soil. This shall be maintained until vegetation growth stabilizes the fill slope. During interim reclamation the temporary stabilization and ditch/dike at the top of the fill slope may be removed as the pad is contoured to mimic surrounding terrain. Erosion inhibiting material as geo-textile matting, blankets, hydro-mulching, mechanically bonded fiber matrix, rip-rap (as required) and timely seeding with a BIA/landowner specified seed mix shall be applied as soon as pad construction is completed.

• A correctly installed silt fence or a continuous line of excelsior wattles (or similar retention device) shall be installed at the toe of “top soil” and “spoils storage” piles to prevent loss of soils. All disturbed slopes shall be seeded and stabilized. ***Topsoil should be placed on top of undisturbed soil. If topsoil is placed on top of gravel it must be placed on a layer of straw or other separation device so as not to mix gravel with topsoil.***

• **STORMWATER** a Storm Water Pollution Prevention Plan (SWPPP) is requested by the State of Colorado when proposing any ground disturbing activities of one (1) acre or greater.

• **Disposal of PRODUCED WATER: Onshore #7**

Shall not be stored in lined or unlined earthen pits but may be stored in steel tanks and disposed of at an approved site or piped to an approved water disposal well.

* ***Submit Sundry Notice of Intent to BLM for approval to dispose of water at an approved disposal site within 90 days. Include items: (1) From: (Well name), (2) Legal Loc, (3) API#, (4) Lease, (5) Fm, (6) Off Lease disposal well site? (a ROW is required from BIA), TO: (7) Inj well name, (8) UIC#, (9) Legal location of water disposal well.***

♦ **TES SPECIES (SUIT FEIS 4.3.3.9):**

If any TES species are identified during well construction or operation, the SUIT and the BIA shall be contacted immediately. Operations that would adversely affect the TES species must be discontinued until consultation with the USFWS indicates that the impacts are deemed “Not Likely to Effect”.

TES SPECIES (Attachment #2 to Decision record of PEA)

• **No disturbance shall take place within 20 meters of federally listed plant occupied habitat.** Any disturbance proposed within 200 meters of listed plants occupied habitat shall be analyzed in separate site specific consultation with the SUIT and the USFWS.

• **Pre-construction surveys shall be conducted of proposed well pad and access route locations for Gunnison prairie dogs.** Direct impacts to prairie dog colonies shall be avoided where possible and in the light of other resource tradeoffs resulting from access road and well pad relocation.

◆**VISUAL RESOURCE MANAGEMENT: (SUIT FEIS 4.9.8)**

All static equipment shall be painted a non reflective environmental green color within seven (7) days of completion of construction as weather permits. The color shall be one shade darker than **background** vegetation (as "Beetle" Green) and may be selected by consulting the BLM Standard Environmental Colors Chart CC-001: June 2008.

◆**WILDLIFE (SUIT FEIS 4.3.3.9):**

Avian species as birds and bats shall be protected from the enticement of warm vent stacks by wire grid or cone covers. Following well drilling during the liquid drying stage for reserve pits, **all pits** shall be fully fenced with bird netting suspended and maintained to protect migratory birds from potential hydrocarbons or toxic chemicals until reclamation is completed.

WILDLIFE (Attachment #2 to Decision record of PEA)

•Construction or other intrusive activities shall be prohibited within 0.5 miles from an **active raptor nest**. •New well locations and ROWs must be a minimum of 0.25 miles from a raptor nest or winter roost.

◆**Bald and Golden Eagle Protection Act: Attachment #2 to Decision record of PEA**

If a construction project is planned during the **bald eagle nesting period (March 16-July 1)** and within 0.5 miles of suitable bald eagle nesting habitat, a pre-construction survey must be initiated by a qualified biologist within 10 days prior to the start of construction to verify the presence or absence of bald eagle nesting activity. (See attachment 2 for survey protocol & compliance requirements on results.)

◆**Bald and Golden Eagle Protection Act: (Attachment #2 to Decision record of PEA)**

If a construction project is planned during the **bald eagle winter roosting** period (November 15-March 15) and within 0.25 mile of a riparian zone with mature cottonwood trees, a pre-construction survey shall be initiated by a qualified biologist within 10 days prior to the start of construction to verify the presence or absence of bald eagle roosting activity. (See attachment 2 for survey protocol & compliance requirements)

● **Migratory Bird Treaty Act: (Attachment #2 to Decision record of PEA)**

If construction is to occur during **Migratory bird breeding season (March through August)** a survey for Migratory birds shall be made **just prior to construction with activities** avoiding nesting/fledgling individuals discovered. The least amount of trench shall be left open overnight and escape routes from trenches provided for wildlife per USFWS recommendation (3/16/2004 letter) in consultation # 2-22-04-I-362.

● **Migratory Bird Treaty Act: (Attachment #2 to Decision record of PEA)**

•No surface disturbing activities disturbance shall take place within 200 meters of known or discovered occupied **Southwest willow flycatcher** breeding habitat May 1 – August 15.

Worksheet
Documentation of Land Use Plan Conformance and NEPA Adequacy (DNA)
U.S. Department of the Interior
Bureau of Land Management (BLM)

CO-SJPLC-11-93-DNA

Samson resources

S. E. Bayfield 34-7; 12U-3A
Gas Well, Access & Pipeline

Note: This worksheet is to be completed consistent with the policies stated in the Instruction Memorandum entitled “Documentation of Land Use Plan Conformance and National Environmental Policy Act (NEPA) Adequacy” transmitting this worksheet and the “Guidelines for Using the DNA Worksheet” located at the end of the worksheet. (Note: The signed CONCLUSION at the end of this worksheet is part of an interim step in the BLM’s internal analysis process and does not constitute an appealable decision.)

A. BLM Office: San Juan Public Lands Center, Durango, Colorado.
Lease/Serial/Case File No. #750-00-1094

Proposed Action Title/Type: ***S. E. Bayfield 34-7; 12U-3A (80Acre) Gas Well with horizontal borehole from private FEE surface into Fee Mineral estate, Indian Mineral Lease #750-00-1094, with bottom hole in Fee Minerals.***

Location of Proposed Action:

WELL SITE: ***S. E. Bayfield 34-7; 12U-3A***

SURFACE: Surface: 2482’ FNL, 477 FWL, Section 12U, T.34N., R7W. NMPM, La Plata County, Colorado

CASING POINT: 1820’ FNL, 954’ FWL, Sec 12U, T.34N., R.7W. , NMPM, La Plata County, Colorado

PRODUCTION: 1972’ FNL, 844’ FWL, Sec 12U, T.34N., R.7W. , NMPM, La Plata County, Colorado

BOTTOM HOLE: 1980’ FNL, 660’ FEL, Sec 12U, T.34N., R.7W., NMPM, La Plata County, Colorado

ACCESS: 2532.38’ New Construction

PIPELINE: 2447.73’ and on pad pipeline to center stake, a length of 116.84’ feet, or 2564.57’.

Proposed Action Title/Type:

S. E. Bayfield 34-7; 12U-3A gas well, access and pipeline. This well would be a FC Formation 80A infill gas well on Fee (Houston Lasater) surface with new access. The access and pipeline R.O.W would be 40’ wide combined and trend directly south from the Echols well access road Sta. 0+00. The R.O.W would extend through a gate. Once through the gate, the access road would be constructed 20’ east of and parallel to a south trending fence. At a cross-fence junction at sta. 8+43.35 the road and pipeline would jog southwesterly through a combination of gates

and trend southerly approximately 20' west of and parallel to said fence. At Sta. 15+77.93 the road and pipeline would begin to arc south-westward to Sta.9+75.01, then westerly to the well pad at Sta. 25+32.38'. The proposed pipeline would accompany the road from Sta. 0+84.65 to the well pad and continue to the center stake.

Description of the Proposed Action:

The proposed actions are described in the Application for Permit to Drill. This action includes the construction of the **S.E. Bayfield 34-7; 3-12U-3A Fruitland** Formation gas well located on undisturbed Fee (Lasater) pasture lands. Construction and slope development zones would use a permitted area of 263 x 165' (0.90A). The permanent level pad would be 206' x 157'. Interim reclamation would trim 0.15 Acres for a permanent disturbed area of 0.74 Acres. All disturbance would be "new" disturbance of pastureland within the permitted area. The grassland pasture vegetation includes Alfalfa, Timothy, White clover, Field bindweed and Foxtail barley, with sedges in irrigation ditches, Canada thistle, Plantiago and Curly doc. Irrigation ditches dissect the area and would be crossed several times. No culturally significant species were noted. Canada thistle is a noxious weed found in sparse amounts on the proposed roadbed and should be controlled.

The proposed pad is located on the east flank of and 50' eastward of Beaver Creek 14 miles north of the New Mexico/Colorado state line and 1 mile east of CR 521 (Buck Highway). The well pad is on a shallow south-east facing exposure. Due to the proximity of Beaver Creek all cuttings and any saline muds used in the horizontal wellbore section would be hauled to an approved site. The drilling system would be fully self-contained with no cuttings trench or reserve pit. Fence crossings would require the re-establishment of gates per landowner agreement with the operator.

Potential future re-completions or formation fracturing operations are unknown and have not explicitly been addressed under the present proposed action. At the time that any future down-hole activity is proposed affecting well configuration, the well-bore and its groundwater isolation effectiveness would be reviewed by the BLM and evaluated to insure proper action would be taken to safeguard aquifers and groundwater impacts.

Applicant (if any): Samson Resources.

B. Conformance with the Land Use Plan (LUP) and Consistency with Related Subordinate Implementation Plans:

LUP Name**Southern Ute Indian Tribe, Natural Resource Management Plan 2000 Update* (NRMP). **Date Approved:** July 2000

This well pad is located on) FEE surface with SUIR minerals leased for oil and gas exploration tapped by a directional wellbore.

Other document** None

Date Approved: NA

***List applicable LUPs (e.g., Resource Management Plans or applicable amendments). NA**
****List applicable activity, project, management, water quality restoration, or program plans.** BMPs for erosion control should be employed. Specifically, EPA *Reasonable and Prudent Practices for Stabilization* “Rapps” should be used to safeguard natural resources.

■ **The proposed action is in conformance with the applicable LUPs because it is specifically provided for in the following LUP decisions:**

The General Goal:

Expand the economic base of the Tribe and improve quality of life and standard of living on the Reservation through balanced development of renewable and non-renewable resources in a culturally and environmentally appropriate manner. (P.IV-1 of *Southern Ute Indian Tribe (SUIT) Natural Resource Management Plan 2000 Update* [NRMP]).

Energy and Minerals Goal:

Ensure that the Tribe is realizing maximum benefit from development of non-renewable resources in an environmentally sound manner. Develop and implement long-range plans for the extraction and development of the Tribe’s mineral resources, balancing the economic benefits of the Tribe with protection of Tribal surface interests, resources and development opportunities. (P.IV-12 of *(SUIT) Natural Resource Management Plan 2000 Update* [NRMP]).

□ **The proposed action is in conformance with the LUP, even though it is not specifically provided for, because it is clearly consistent with the following LUP decisions (objectives, terms, and conditions) and, if applicable, implementation plan decisions:**

C. Identify the applicable NEPA document(s) and other related documents that cover the proposed action.

List by name and date all applicable NEPA documents that cover the proposed action.

This DNA is tiered to the [Programmatic Environmental Assessment for 80 Acre Infill Oil and Gas Development on the Southern Ute Indian Reservation](#) which is in turn tiered to the [Final Environmental Impact Statement \(FEIS\) Oil and Gas Development on the Southern Ute Indian Reservation \(CO-SJFO-01-001 EIS\)](#) because this well proposed to be drilled on this pad is an 80 Acre infill well.

- 1) [Programmatic Environmental Assessment for 80-Acre Infill Oil and Gas Development on the Southern Ute Indian Reservation](#)” (PEA), Date Approved: Decision Record dated August 10, 2009.
- 2) “[Oil and Gas Development on the Southern Ute Indian Reservation Final Environmental Impact Statement](#), July 2002” (SUIT EIS), Department of the Interior, Bureau of Land Management-Colorado State Office, in cooperation with the Bureau of Indian Affairs-Southwest Regional Office and the Southern Ute Indian Tribe. **Date Approved:** Record Of Decision (SUIT ROD) dated October 29, 2002.

- 3) “*Environmental Assessment of Oil and Gas Leasing and Development on Southern Ute Indian Reservation*”, Date Approved: September 28, 1990.

List by name and date other documentation relevant to the proposed action (e.g., source drinking water assessments, biological assessment, biological opinion, watershed assessment, allotment evaluation, rangeland health standard’s assessment and determinations, and monitoring the report).

■ **Cultural resources** threatened by development are protected by the Antiquities Act of 1906, [Public Law (PL) 52-209], the National Historic Preservation Act of 1966 (PL 89-665) and as amended (PL 52-209) and its regulations (36 CFR 800), and other legislation including the National Environmental Policy Act of 1969 (PL 91-852) and its regulations (40CFR 1500-1508), the 1971 Executive Order No. 11593, the Archaeological and Historical Conservation Act of 1974 (PL 93-291), the Archaeological Resources Protection Act of 1979 (PL 96-95 and its regulations (36 CFR 296), the American Indian Religious Freedom Act (48 USC 1996) and the Native American Graves Protection and Repatriation Act of 1990.

In compliance with these regulations, an intensive archaeological survey of the proposed well pad and combined pipeline/access route was conducted at an **August 23, 2011 onsite inspection** by Jamie Karlson and Paula Fluger of Stratified Environmental and Archaeological Services, LLC of Ignacio, Colorado. A record review of known sites including a file search of the Office of Archaeology and Historic Preservation, Colorado Historical Society was accomplished. No new significant cultural sites were considered eligible for listing in the National Registry of Historic Places. Surface evidence encountered during the field inspections did **not indicate** the presence of any other potentially significant cultural resources within the areas currently under proposal for use.

The **Cultural** Survey Report (MCES #11-112) was prepared by Stratified Environmental and Archaeological Services, LLC and reviewed by the Office of the Southwest Regional Archaeologist, BIA, Albuquerque, with concurrence by the State of Colorado Office of Archaeology and Historic Preservation with consultation of the Southern Ute Indian Tribal Cultural Preservation Officer. The Southern Ute Indian Tribe has indicated that no known Native American Sacred sites or Traditional Cultural properties would be affected by the proposed action.

The BIA, SW Regional Office archaeologist review shows a determination of no historic properties affected. The proposed action would be in compliance with Section #106 of the National Historic Preservation Act. (See also “Oil and Gas Development on the Southern Ute Indian Reservation-Final Environmental Impact Statement” (SUIT FEIS p. 3-66; pp. 3-111 to 3-117.) Archaeological clearance was sent to Samson Resources on September 19, 2011. A copy of the *Approval of Cultural Resources Compliance on Southern Ute Tribal Lands* (Appendix A) from the BIA, SW Region, Albuquerque, New Mexico **issued September 19, 2011 was received by the BLM on February 7, 2012.**

■ **Threatened and Endangered flora and fauna species** are protected under the Endangered Species Act of 1973 as amended (PL94-325). Additionally, the Migratory Bird Treaty Act (16USC703-71L) and the Eagle Protection Act (16 USC I.S.C. 668a-668b) protect other sensitive wildlife species potentially occurring in the proposed project area.

In compliance with Section VII of the Endangered Species Act of 1973, as amended, 50CFR Parts 402 and 424, informal contact was made with the United States Fish and Wildlife Service for a listing of Threatened, Endangered and Sensitive (TES) species appropriate for this area. Also considered were impacts to Colorado Natural Heritage Program (CNHP) Environmental Review list for La Plata County. Other sensitive species such as those protected by the Migratory Bird Treaty Act (MBTA) and game species were considered. Avian species as birds and bats shall be protected from the enticement of warm vent stacks by wire grid or cone covers. Following well drilling and completion during the liquid drying stage for reserve pits, the pits should be fully fenced and maintained bird netting suspended above the water to protect migratory birds until reclamation is completed.

A survey for threatened and endangered (TES) flora and fauna species was conducted at the **August 23, 2011** onsite by Mindy Paulek, biologist with Prymorys Environmental Consulting, INC. The Biological Assessment and “criteria sheet” was prepared to analyze affects at the specific project site and time presented herein. The proposed well pad and pipeline route were surveyed with a buffer zone along the perimeter.

As of February 15, 2011 the USFWS listed 11 **Threatened, Endangered, or Candidate species** with the potential to occur on the SUIR. The listed species including the Mexican spotted owl, Yellow-billed cuckoo, Canada lynx, Wolverine, Colorado Pikeminnow, Razorback sucker, Pagosa sky rocket, Mancos milk-vetch, Knowlton’s cactus, and Mesa Verde cactus, were eliminated from detailed evaluation because the project site does not offer suitable habitat, no individuals were present, are not known to occur in this area, the area is outside of their known range and no individuals were identified. The Wolverine was added February 15, 2011 for a total of 12 species listed. The wolverine would have no viable habitat in the action area. **Ten** of the species were eliminated from detailed evaluation because the project site does not offer suitable habitat, no individuals were present or are not known to occur, the area is outside of their known range and no individuals were identified. These species include the Mexican Spotted owl, Yellow-Billed Cuckoo, Southwestern Flycatcher, Canada Lynx, Wolverine, New Mexico Meadow Jumping Mouse, Pagosa Sky Rocket, Mancos Milk-Vetch, Knowlton’s Cactus, and Mesa Verde Cactus. No potential habitat or individuals were discovered during the surveyed. Brought forward for discussion were the Colorado River Fishes discussed below.

Excerpt update from recent Prymorys BA:

Note: “The US Army Corps of Engineers initiated formal consultation with the USFWS on September 6, 1995 for the Pine River Water Supply intake structure. The USFWS responded in a Biological Opinion on May 17, 1996 that water depletion (225 Acre-feet) from the municipal water source was jeopardizing the continued existence of the Colorado River fishes. Water may be used

from this source to control fugitive dust. Water would be obtained within this sources current depletion of 225 Acre-Feet from the Los Pinos River and would not increase the amount of water taken from the river for the water supply.

Consultation with the USFWS occurred for the Oil and Gas Development on the SUIR BA prepared by the Bureau of Land Management, Bureau of Indian Affairs, and the Southern Ute Indian Tribe for the Oil and Gas Development on the SUIR. SUEIS-FEIS 2002. Informal consultation was engaged with the USFWS for the BA. The USFWS requested additional information on the Bald eagle, Southwestern Willow Flycatcher, and the endangered Colorado River Fishes. Subsequently, a supplement was prepared for formal consultation with the USFWS.

The BA gave determinations of “may affect, but not likely to adversely affect” for five species listed with the USFWS under the ESA. These were the bald eagle, southwestern willow fly catcher, Mexican spotted owl, Knowlton’s cactus, and the Mancos milkvetch. Two species determinations were “may affect and likely to adversely affect” due to potential water depletions of a 100 acre-feet or mote of water per year from the San Juan River system from natural gas well drilling. These were the Colorado pikeminnow and the razorback sucker.

Determinations for these species were made for the greater impacts from all foreseeable future oil and gas development on the SUIR. This BA is prepared to analyze effects to federally threatened, endangered and candidate species from the site specific project presented herein.

On May 19, 1999 the USFWS issued a biological opinion determining that depletions of a 100 acre-feet or less would affect the flows identified as necessary for the recovery goals of the Colorado River fishes (Razorback sucker and Colorado pikeminnow), but would not result in the jeopardy of the fish or result in adverse modification of their critical habitat. See BA for more in depth explanations.

Consultation with the USFWS occurred for the Programmatic Environmental Assessment for 80 Acre Infill Oil and Gas development on the Southern Ute Indian Reservation (PEA) The BA gave determinations of “may affect, not likely to adversely affect” for four (4) species listed with the USFWS under the ESA. These were the “southwestern willow flycatcher, yellow-billed cuckoo, Knowlton’s cactus, and the Mancos milk-vetch. Two species determinations were “may affect, likely to adversely affect” due to potential water depletions of 18 acre feet of water per year from the San Juan River system from natural gas well drilling. These were the Colorado pikeminnow and razorback sucker.

On 27 May 2009, THE USFWS issued a letter of concurrence for the 80 Acre PEA’s findings based on the conservation measures proposed in the BA and the fact that all development will be analyzed site specifically in the future, and if it is determined that the actions may affect a listed species, further site specific consultation will occur. The water use and associated depletions from the San Juan River system for 80-acre infill projects were previously addressed in the Programmatic Biological Opinion (PBO) for Water Depletions Associated with BLM’s Fluid Minerals Program and Other Actions by BLM on Public Lands within the San Juan River Basin in Colorado (ES/GJ-6-CO-08-F-002)...(See BA for more in depth explanations.)

Species of Concern. Wildlife surveys were conducted **August 23 2011**. The project will not knowingly adversely affect suitable or potential habitat for *species of concern* which do not have a legal status and are not strictly protected. The Bald and Golden eagle are not listed, but of tribal concern and winter roosting/nesting would be taken into consideration.

If any TES species are identified during well construction or operation, the Southern Ute Indian Tribe and the BIA-Southern Ute Agency will be contacted immediately. Construction activities potentially adverse to the species would cease until clearance from the BIA/Southern Ute Indian Tribe and the USFWS is received.

No impacts to TES species (flora or fauna) are expected to occur from the development of the proposed well pads, access roads, and pipeline routes.

Migratory birds: Executive Order 13186 addresses concerns over impacts toward migratory birds and their habitats. The Migratory Bird Species Act (16 U.S.C. 703-711) notes numerous birds of the southwestern US that are assigned a migratory status. The intent is to minimize the “take” of migratory birds through consideration in land use decisions and in collaboration with the USFWS. The implications of this action have been assessed along with the site visit for evaluating potential impacts to protected species. Migratory birds common to the southwestern U.S. are likely to be present in the project area. No occupied nests or individual birds were discovered. Habitat was not concluded to be critical for migration bird viability. No migratory bird impacts are anticipated from this proposed project. As the breeding seasons of migratory birds coincides with the oil and gas drilling season, limiting occupancy to after the nesting/breeding/fledgling period is impractical. Reasonable searches for the presence of migratory individuals with nesting potential have been instituted to prevent the inadvertent “take” of migratory birds.

If the construction is to occur during the breeding season of migratory birds (March through September) a clearance survey should be conducted in the affected area. The proposed activity would avoid the “take” of species (occupied nests, eggs, fledglings) nesting in the proposed action area. A provision to require the least amount of trench left open overnight providing escape routes from trenches would reduce the unintentional taking of wildlife per USFWS recommendation of March 16, 2004 letter WRT Consultation #2-22-04-I0262.

No potential impacts to migratory birds were noted or indicated. Bald Eagles, Peregrine falcons, and ferruginous hawks may incidentally pass through the project area. No occupied nests were observed.

[The statement of Criteria for Preparation of Site-specific Biological Assessments for Infill Gas Development on the Southern Ute Indian Reservation was prepared after a field survey & received from Prymorys Environmental Consulting, Inc. dated September 8, 2011 and received by BLM on January 10, 2012. A determination anticipating “No Effect \(PEA BO notwithstanding\)” from Prymorys Environmental Consulting, Inc. dated September 8, 2011 was received by the Bureau of Land Management-San Juan Public Lands Center on **January 10, 2012** for all TES flora and fauna species. The Threatened, Endangered, and Sensitive Species survey report was reviewed by the Southern Ute Indian Tribe Department of Natural Resources-Wildlife and BIA-Southern Ute Agency in Ignacio, Colorado. \[Documentation of the survey report was issued to SUIT-DNR-Wildlife Division and reviewed by Steve Whiteman. The updated criteria list and current TES species list was cleared by the SUIT-DNR-Wildlife Division January 28, 2012 in an inter-office memorandum.\]\(#\)](#)

The biological assessment (Appendix B) is attached to the BIA copy of this document which is available at the BIA-Southern Ute Agency office in Ignacio, Colorado. This project was determined to have **no effect** on any federally listed species or on critical habitat of listed species and was issued by the Southern Ute Tribe-Department of Energy on February 3, 2012 and received by the BLM on February 6, 2012.

■ An **APD concurrence** letter (Appendix C) was issued by the Southern Ute Tribe-Department of Energy dated February 3, 2012 received by the BLM February 6, 2012. The letter confirms Wildlife and TES species clearance by the SUIT Department of Natural Resources, and consultation with the Tribal Cultural Preservation Officer granting clearance of cultural resources with BIA-Southern Ute Indian Tribal Agency concurrence - in addition to concurrence on the issuance of the APD. A copy of this letter is attached to this document (Appendix C) and is available at the SUIT office in Ignacio, Colorado, as well as at the San Juan Public Lands Center-BLM, Durango, Colorado.

■ An “**on site**” investigation was conducted between prospective oil and gas operator representatives (land surveyor, construction supervisor, landman), contract biologist, contract Archaeologist, BLM acting Surface Protection Specialist and SCEP Student August 23, 2011. During these field visits environmental surveys were conducted, specialists consulted, and alternative access and pipeline routes discussed. Mitigation measures were suggested, plat changes needed communicated and relayed to the operator representative. No new significant cultural site was identified. No undue surface degradation is anticipated.

This action includes the construction of the *horizontal S.E. Bayfield 34-7; 12U-3A Fruitland* Formation gas well. No Laterals are anticipated at this time. No saline mud use is anticipated. A landowner agreement is between the landowner and the operator showing reclamation requirements and operator certification is provided that BLM access is granted by the landowner. Surface disturbance would normally include, as needed: clearing vegetation, leveling the pad staging, slope development, soils storage, drilling, and completion all on the permitted area. ***Drill cuttings would be placed in a steel bin and removed to an approved site.***

Fence crossings are to be negotiated between the operator and the landowner. All irrigation ditches must be preserved (through the installation of culverts) to the satisfaction of the landowner. Required crossings noted include the following:

<i>Approx. Station</i>	<i>Feature</i>	<i>Solution</i>
<i>Sta. 0+61</i>	<i>gate</i>	<i>Install gate provision in coordination with landowner</i>
<i>Sta. 3+00</i>	<i>Irrig ditch</i>	<i>Min 18” adequate Culvert beneath road approx. 100’</i>
<i>Sta. 8+25</i>	<i>2 intersecting Irrig ditches</i>	<i>Min 18” adequate Culverts</i>
<i>Sta. 9+20</i>	<i>2 gates</i>	<i>Install replacements in coordination with landowner.</i>
<i>Sta. 10+49</i>	<i>Irrig ditch</i>	<i>Min 18” adequate Culvert</i>
<i>Sta. 14+82</i>	<i>Irrig ditch 24”</i>	<i>Adequate minimum 24” dia. culvert.</i>

Permanent pad slopes should not exceed 3:1. New pad slopes should be lined at top and toe with excelsior logs, and if greater than 2:1 the slope should be covered with an erosion inhibiting material and seeded with a BIA approved seed mix.

Interim reclamation to the wellbore anchors and that area needed for regular maintenance would include contouring of the pad to surrounding landscape, even spreading of all topsoil on areas not on graveled “pull-through”, soil preparation and seeding to be performed directly after the drilling of the well and cuttings removal.

Final reclamation would occur at the end of the useful life of the wells and would involve removal of equipment and trash, contouring to original landform, preparation of soils and reseeding with BIA-approved weed free seed mixtures or landowner specified seed mix in the event of Fee surface ownership. On-site documentation is attached to the BIA copy of this document in Appendix D and is available at the BIA office in Ignacio, Colorado, and the San Juan Public Lands Center BLM office.

■ **The Clean Water Act** of 1972 (CWA), as amended, protects waters of the United States of America, through the EPA and the Army Corps of Engineers (COE). This includes navigable waters and tributaries as perennial rivers, intermittent streams, ephemeral streams, wetlands and dry washes with a defined bed and bank or scour evidence of flow, the destruction of which could affect interstate commerce. Section #404 regulates discharges of dredged materials by mechanized land clearing and structures in, over, or under navigable waters (crossings) of defined water courses. Section #402 regulates discharge of pollutants, primarily fill materials (sedimentation) under a storm water pollution prevention (SWPPP) plan.

Any potential CWA concerns were identified during the on-sites. Mitigation, as applicable, has been recommended to avoid degradation to the waters of the U.S. Channels are to be crossed at as near right angles as practicable and erosion control measures shall be implemented as appropriate. See Conditions of Approval.

Specifically at this location, a Storm Water Management Plan is requested on the SUIT lands. All necessary Clean Water Act #404 permits and EPA #401 certification must be obtained and followed.

■ **The 1972 Clean Air Act** as amended (EPA 1990) regulates National Ambient Air Quality Standards (NAAQS) to control air pollution. In Colorado, the state oversees air quality regulations and standards for stationary sources of air pollution. Air Quality impacts from the number of wells proposed for oil and gas activities were disclosed in the SUIT EIS, 2002, section 4.2 pp 4-6 to 4-22.

D. NEPA Adequacy Criteria

1. Is the current proposed action substantially the same action (or is a part of that action) as previously analyzed? Yes.

Documentation of answer and explanation:

The SUIT FEIS analyzed potential impacts related to recovery of oil and gas reserves known to exist in the mineral estates held in trust by the United States for the benefit of the Southern Ute Indian Tribe. The FEIS analyzed drilling windows within the SUIT Reservation. The proposed action is located within one of the windows analyzed in the FEIS. The FEIS recognized that an on-site inspection would be conducted by BIA and BLM resource specialists. The purpose of these inspections is to determine appropriate changes or modifications to the proposed action in order to avoid conflicts with other resources.

The SUIT PEA analyzed potential impacts related to recovery through 80 Acre spaced wells of oil and gas reserves known to exist in the mineral estates held in trust by the United States for the benefit of the Southern Ute Indian Tribe. The PEA recognized that an on-site inspection would be conducted by BIA on Indian surface lands and BLM resource specialists on Indian and Fee surface lands with split estate. The purpose of these inspections is to determine appropriate changes or modifications to the proposed action in order to avoid conflicts with other resources.

Appendix E lists those mitigations described in the Record of Decision and Decision Record and deemed applicable to this site, and identified as a result of the on-site inspection. Incorporation of these mitigations as Conditions of Approval will ensure that the proposed action conforms to the FEIS/ROD & PEA/DR.

The proposed pipeline corridor and well pad were surveyed at the time of the “onsite” visit. Cultural and wildlife clearance for these proposed actions was confirmed by the Southern Ute Indian Tribe in a letter of APD concurrence dated **February 3, 2012 and received by the BLM on February 6, 2012.**

2. Is the range of alternatives analyzed in the existing NEPA document(s) appropriate with respect to the current proposed action, given current environmental concerns, interests, resource values, and circumstances? Yes.

Documentation of answer and explanation:

In general, environmental concerns, interests, resource values, and circumstances have not significantly changed since the ROD and DR was signed. Also, the onsite inspection did not identify any aspects that would generate an alternative that was not analyzed in the FEIS or the PEA. The range of alternatives as analyzed in the SUIT FEIS and PEA is appropriate.

3. Is the existing analysis adequate and are the conclusions adequate in light of any new information or circumstances (including, for example, riparian proper functioning condition [PFC] reports; rangeland health standards assessments; Unified Watershed Assessment categorizations; inventory and monitoring data; most recent Fish and Wildlife Service lists of threatened, endangered, proposed, and candidate species; most recent BLM lists of sensitive species)? Can you reasonably conclude that all new information and all new circumstances are insignificant with regard to analysis of the proposed action? Yes

Documentation of answer and explanation:

The ROD was signed on October 29, 2002. [The Decision Record for the PEA was signed August 10, 2009.](#) No other analyses since then have resulted in new information. Current circumstances have not changed from those described in the FEIS [and the PEA.](#)

4. Do the methodology and analytical approach used in the existing NEPA document(s) continue to be appropriate for the current proposed action? Yes.

Documentation of answer and explanation:

The same standard practices and analytical approach is used today as when the SUIT EIS was originally drafted and the SUIT ROD signed October 29, 2002, [and when the PEA was originally drafted and Decision Record signed August 10, 2009.](#)

5. Are the direct and indirect impacts of the current proposed action substantially unchanged from those identified in the existing NEPA document(s)? Yes.

Does the existing NEPA document sufficiently analyze site-specific impacts related to the current proposed action? Yes.

Documentation of answer and explanation:

The FEIS [and PEA](#) analyzed potential impacts that may result from activities related to oil and gas recovery within the SUIT Reservation and identified mitigations for these activities. The ROD states that:

“Authorization of oil and gas development is a staged decision-making process. Each decision is based on environmental analysis and disclosure of the probable resource effects, in accordance with the National Environmental Policy Act of 1969 (NEPA). At the first stage, a programmatic EIS provides for extended analyses, encompassing environmental protection measures, and mitigation and monitoring to be broadly applied. The programmatic EIS does not authorize site-specific actions. Following the EIS and ROD, each site-specific action will be analyzed and approved subject to an authorizing permit with site-specific protection measures. At this second stage, permits issued for Tribal oil and gas activities include Application for Permit to Drill (APD) a well, Sundry Notices for surface disturbing activities such as on-lease roads, pipelines and other mineral related facilities, and right-of-way (ROW) grants for off-lease roads, pipelines and other of-lease oil and gas facilities. For each site-specific proposal, a field on-site evaluation is conducted. The BLM and BIA then prepare an environmental analysis, in conformance with NEPA, analyzing proposal-specific impacts to surface and sub-surface resources. Site-specific environmental protection, mitigation and monitoring measures derived from this analysis are attached to the permit as conditions of approval for APDs and Sundry Notices, and stipulations for ROW grants. All Tribal oil and gas actions must follow this two-staged process. As a result, Tribal site-specific mineral related actions must comply with both the ROD requirements as well as the explicit measures from the site-detailed environmental analysis.” (pp. 3,4).

On-site investigations were conducted on **August 23, 2011**. Resource specialists identified those mitigations as described in the FEIS/PEA which are applicable to this site. Attendees did not identify any new impacts that have not been identified in the FEIS/PEA.

6. Can you conclude without additional analysis or information that the cumulative impacts that would result from implementation of the current proposed action are substantially unchanged from those analyzed in the existing NEPA document(s)? Yes

Documentation of answer and explanation:

The onsite did not disclose any impacts not analyzed in the SUIT FEIS/PEA.

7. Are the public involvement and interagency review associated with existing NEPA document(s) adequately for the current proposed action? Yes.

Documentation of answer and explanation:

Public involvement was conducted throughout the environmental analysis process. Scoping was initiated through the BLM's publication of a Notice of Intent (NOI) to prepare an Environmental Impact Statement (EIS) in the Federal Register. A scoping meeting was held. A scoping summary report was then prepared and made available to the public. Public issues and concerns identified during the scoping period are summarized in Chapter 1, Table 1-1 of the EIS. The BLM and the Environmental Protection Agency (EPA) published Notices of Availability (NOA) of the Draft EIS (DEIS) in the Federal Register. A public meeting was held mid-way through the 75 day comment period. All comments received are reproduced in Chapter 5 of the EIS. The BLM and EPA Notices of Availability were published in the Federal Register. The NOAs invited a 30-day comment and availability period for the Final EIS. Southern Ute Indian Tribal staff, BIA representatives, the USFWS, the EPA and BLM personnel were involved throughout the EIS process. The US Army Corps of Engineers was consulted as needed for waters of the US considerations.

The PEA (Programmatic EA) prepared for this proposal was posted for BLM and BIA on the following website: <http://ocs.fortlewis.edu/BLMPEA/>. The PEA was released on April 22, 2009 with a 30 day public comment period. The comment period was subsequently extended an additional two weeks with a comment receipt deadline of June 5, 2009. A news release was provided to approximately 140 contacts, including newspapers, radio and television stations; environmental groups; elected officials and aids; and individual interested parties. The availability of the PEA was announced in the Durango Herald (newspaper) on April 19 and 22, 2009. The comment deadline extension was announced in the Durango Herald on May 21, 2009. Print copies of the PEA, as well as, the 2002 FEIS, were made available for viewing during the comment period at the Durango Public Library and the Ignacio Community Library. The deadline for comments on the PEA was June 15, 2009. A total of eight (8) responses were received: six hard copy letters and two via the BLM/BIA website. All electronic messages were printed and are included with the "hard copy" letters in the administrative record for this project. BLM and BIA staffers reviewed all comment letters and electronic messages. Issues provided by the public are summarized and addressed in an Appendix L to the Final PEA.

The ROD was signed by the BLM on August 10 and the BIA on August 10, 2009. The Public Notice was released August 12, 2009 for a 30-day appeal period, ending September 11, 2009.

E. Interdisciplinary Analysis: Identify those team members conducting or participating in the preparation of this worksheet.

Participants @ Onsite August 23, 2011:

<u>Name</u>	<u>Title</u>	<u>Resource Represented</u>
Dave Swanson	Acting Surface Protection Specialist	BLM
Ryan Joyner	NRS (SCEP)	BLM
Mindy Paulek	Biologist	Prymorys LLC
Jamie Karlson	Archaeologist	SEAS
Paula Fluger	Archaeologist	SEAS
Bill Mahnke	Surveyor	Energy Surveyors, Inc
David Meyer	Landowner Representative	Samson Resources
David Meyer	Landman	Samson Resources
Lynn Davis	Superintendent-Pdn	Samson Resources

DNA Review:

William Dodd	Tres Rios Field Office-Associate Manager (on Fee surface)
Jim Friedley	BIA- SU Agency-NEPA Coordinator (on SUIT surface)

WILDLIFE REVIEW

Steve Whiteman	SUIT Wildlife Division Head-DNR Environmental Coordinator
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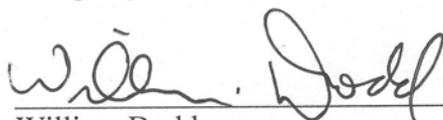
CULTURAL RESOURCES REVIEW

Bruce Harrill	BIA-SW Regional Archaeologist
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CONCLUSION

- Based on the review documented above, I conclude that this proposal conforms to the applicable land use plan and that the existing NEPA documentation fully covers the Proposed action and constitutes BLM’s compliance with the requirements of NEPA.

Note: If one or more of the criteria are not met, a conclusion of conformance and/or NEPA adequacy cannot be made and this box cannot be checked.



 William Dodd
 Tres Rios Field Office-BLM-Associate Manager

2/10/12

APPENDIX A

**BIA-SOUTHWEST REGIONAL CULTURAL RESOURCE
CLEARANCE LETTER**

APPENDIX B

**BIOLOGICAL ASSESSMENT
Threatened, Endangered, Sensitive Species Report**

APPENDIX C

**BIA-SOUTHERN UTE AGENCY
LETTER OF APD CONCURRENCE with CULTURAL and TES SPECIES
CLEARANCE**

APPENDIX D

**SUIT ON-SITE REPORT
with Resource Specialist Comments**

Always note in the report whether it has been determined that impacts resulting from this specific action are/are not analyzed in the FEIS

Surface Construction Personnel Note
Appendix E

Attachment to DNA #DOI-BLM-CO-S010-2011-93
S.E.Bayfield34-7-12U-3A
Gas Well and Pipeline

SUIT FEIS “ROD” and PEA “DR” Management Requirements”

*Management Requirements for Implementation of the Agency and Tribal Preferred Alternative. Consult Attachment #1 (a 19 page document of the SUIT EIS Record of Decision, October 2002 and Attachment #2 to the SUIT Programmatic EA Decision Record and Finding of No significant Impact for 80 Acre Infill oil and Gas development on the Southern Ute Indian Reservation, July 28, 2009 for **minimum general requirements** that describes environmental protection measures for Oil and Gas operations on the Southern Ute Indian Reservation which are based on existing procedures, policies and regulations, as well as, new measures developed in the EIS and Programmatic EA processes). The measures therein and below are annotated to indicate their origin, and organized by resource in the same manner as in the EIS.*

Implementation of the Agency and Tribal Preferred Alternatives in the EIS and the PEA is **contingent upon compliance with those environmental protection requirements and site specific requirements from the onsite listed below.**

Site Specific Mitigations Identified through the Onsite Process

APD Conditions of Approval

(Result of “on-site” & the DNA process as provided for in the EIS/ROD and the PEA /DR):

In order to comply with the provisions of the SUIT EIS Record Of Decision and the SUIT PEA Decision Record, the following *mitigations* are attached to the approved APD, and pertain to the ***specific well pad (italic red type)*** and for all wells (**black normal type**), pipeline and access road actions proposed.

◆ **NO SURFACE DISTURBANCE** shall begin until the Edge of Disturbance Corners and Midline markers of the permitted area have been re-established and are clearly marked..

◆ **REQUIRED NOTIFICATIONS**

The BLM Minerals Division - Surface Protection Specialist shall be notified **5 days** prior to the onset of pad/road construction at 970-247-4874 or 970.385.1370. On fee surface lands COGCC at 970-259-0945 or 259-4587 shall be notified of start of location construction and Spud.

The BLM Minerals Division shall be notified at least **48 hours** prior to commencement of interim and/or final surface reclamation activities at 970-247-4874 or 970.385.1370 (BLM) and 563-4780 (SUIT-Range).

◆ **AIR QUALITY:** (Attachment #2 to Decision record of PEA)

◆ All new and replacement internal combustion gas field engines must meet, at minimum, recently promulgated (January 18, 2008 73FR3568 New Source Performance Standards NSPS (40CFR 60, Subpart JJJ) & shall emit no more than 1 gm of NO_x per HP hour. (See.)

◆ All prime mover diesel drilling rig engines must meet Tier 2 emission standards.

◆ Green completions shall be practiced per COGCC Rule #805-3 to maximize resource recovery and minimize releases to the environment.

◆ **CLEAN WATER ACT: EPA “Reasonable and Prudent Practices for Stabilization”** Best Management practices shall be employed to control storm water and erosion.

◆**CULTURAL (SUIT FEIS Sec 4.8.9)** as specified
(Attachment #2 to Decision record of PEA). As prescribed.

◆**HEALTH & SAFETY (SUIT FEIS 4.1.12.7)**

- The wellhead and equipment of existing well(s) shall be protected by effective barriers from inadvertent damage during construction of the new well.

(Attachment #2 to Decision record of PEA)

- Oil and gas operators must provide **sanitary facilities within a 10 minute drive** of any given facility.

- SPILLS** Verbal Notification shall be made immediately and no later than 24 hours after the discovery of a breach of integrity. The company shall verbally report to the BLM within 24 hours spills of greater than 100 BBLs or greater than 500 MCF of gas. (There shall be a written report delivered to the BLM, Durango Office at 385-1370 or FAX 375-2338 within 10 days of the loss of greater than 10 BBLs of liquid or 50MCF gas). Spills shall be contained immediately upon discovery, reclaimed as possible and contaminated soils removed.

◆**HYDRAULIC FRACTURING CONDITIONS OF APPROVAL REQUIREMENTS:**

- The placement of all stimulation fluids shall be confined to the objective formation to the extent practicable.

- During stimulation operations the bradenhead annulus pressure shall be monitored, recorded, and delivered to the BLM-Tres Rios Field Office promptly.

- If an increase in pressure exceeds 25 psig at any time during stimulation the Operator shall notify the BLM verbally within 24 hours and submit a sundry notice within 15 days giving details of incident, corrective action taken and remediation proposed. All stimulation records shall be kept by the operator for a period of at least 5 years and made available to the Authorized Officer upon request.

- Operator shall inventory chemicals kept at well site during drilling, completion and work-over operations, including hydraulic fracturing. This information shall be provided to agency officials promptly upon request. As a (COA) to the APD the operator must provide a list of chemical/compounds (proprietary formulas or concentrations are not required) used in hydraulic fracturing to the regulatory agency (AO- BLM-Tres Rios Field Office). Operators are encouraged to participate in reporting chemicals used during hydraulic fracturing on a well-by-well basis to “*FracFocus*”.

- Operators shall ensure a hydraulic seal in casing annulii and provide a cement bond log on the production casing to confirm that cement has properly isolated the hydrocarbon bearing zones. The surface casing shall be cemented to surface from 50’ below the base of the deepest known potable aquifer.

- Operators shall identify and access plugged or abandoned gas wells within ¼ mile of the proposed well bore and surface trace of proposed horizontal lateral(s) and install a “soil vapor test tube” (SVT)* in the direct proximity of the well head(s) with results forwarded timely to the BLM-Tres Rios Field Office. The SVT test site shall be monitored (1) prior to hydraulic fracturing, (2) during stimulation and (3) one year following stimulation with results forwarded to the BLM promptly. The test location shall be protected and maintained for future monitoring as required.

- The recycling of hydraulic flowback water is encouraged as is the use of Fruitland Fm produced water if compatible with the formation being stimulated. Hydraulic fracturing fluids that are not recycled shall be disposed of in approved class II injection wells or at a commercial disposal facility. No hydraulic fracturing flowback water may be discharged to surface waters.

- Berms (Dikes) or other secondary adequate and effective containment/impoundment devices shall be constructed of sufficient size to contain 150% of the largest tank in the enclosure, shall be impervious to

contain any spilled or released material with barrier beneath tanks as well as over berms and shall be maintained in workable condition without perforations, tears, leaks or breaches.

- “Frac” tanks shall be underlain by an impermeable membrane of 35mil thickness surrounded by a diked impoundment of 2’ tall berms to contain potential spills.

- Retrieved “flowback” or “produced” waste water from hydraulic fracturing shall be injected into deep geological formations that are disconnected from overlying shallow potable water aquifers.

- Operator shall follow “Practices for Mitigating Surface Impacts Associated with Hydraulic Fracturing” API Guidance Document “HF3” First Edition, January 2011.

◆ **LANDS USE- (SUIT FEIS Sec 4.6.8)** The contractor shall use Best Management Practices (BMP’s) to protect natural resources by eliminating or minimizing adverse impacts to the environmental public health and the natural resources to control storm water and erosion..

- The stripped topsoil (generally minimum 6-8”) shall be stockpiled separately and clearly marked for interim reclamation. Where soil is placed over *Temporary Use Areas* care must be taken so as not to disturb topsoil. A straw interface or comparable may be required to accomplish this.

- Tree stumps shall not be buried, but may be used for erosion control (See SUIT well site stipulations)

- On roadway construction, topsoil must be salvaged where available during construction and re-spread to the greatest degree practical on cut slopes, fill slopes, and borrow ditches prior to seeding.

- On any pre-existing well pad designed to host an additional wellbore, repairs shall be made to any erosion gullies on cut and fill slopes. Geo-textile blankets, hydro-mulch, mechanically bonded fibre matrix, or rip-rap shall be applied as required to control erosion. Slopes shall be seeded with a BIA approved seed mix.

• Fence crossings and irrigation ditch crossings are to be negotiated between the operator and the landowner. All irrigation ditches must be preserved (through the installation of culverts) to the satisfaction of the landowner. Required crossings noted include the following:

<i>Approx. Station</i>	<i>Feature</i>	<i>Solution</i>
<i>Sta. 0+61</i>	<i>gate</i>	<i>Install gate provision in coordination with landowner</i>
<i>Sta. 3+00</i>	<i>Irrig ditch</i>	<i>Min 18” adequate Culvert beneath road approx. 100’</i>
<i>Sta. 8+25</i>	<i>2 intersecting Irrig ditches</i>	<i>Min 18” adequate Culverts</i>
<i>Sta. 9+20</i>	<i>2 gates</i>	<i>Install replacements in coordination with landowner.</i>
<i>Sta. 10+49</i>	<i>Irrig ditch</i>	<i>Min 18” adequate Culvert</i>
<i>Sta. 14+82</i>	<i>Irrig ditch 24”</i>	<i>Adequate minimum 24” dia. culvert.</i>

◆ **Interim Reclamation (SUIT-FEIS Sec4.6.8)**

Reserve pits shall be free of oil or other liquid and solid wastes, allowed to dry, water pumped out or mud solidified in-situ prior to backfilling. Reserve pit liner fabric shall be cut at the solids line and disposed off-reservation at an approved facility. The backfilled pit shall be covered with 3’ of clean soil.

Interim reclamation outside of the well-bore anchors to that area needed for routine maintenance and service with a graveled pull through shall be accomplished directly after the drilling of the well and reclamation of the reserve pit/cuttings trench. If areas of the pad or fill slopes have been graveled in anticipation of the construction phase, that gravel must be removed from all interim reclaimed areas including pad surface and developed slopes. The well pad shall be contoured (berms at top of fill slopes eradicated) to blend with the surrounding natural landscape. All topsoil shall be evenly spread on areas not on the graveled turnaround,

soil prepared, stabilized, and seeded in the Fall or Spring with a BIA approved seed mix. Excelsior at the base of fill slopes shall remain until vegetation stabilizes slopes.

Topsoil segregated from stockpiled spoil shall be replaced during reclamation in its respective original position (last out, first in) to minimize mixing of soil horizons. Soil will be amended in accordance with reclamation plans and reseeded with BIA approved weed-free seed mix. Subsurface material should never be placed on top of topsoil material at any point in the operation (2007 Gold Book, p.17)

Vegetation and topsoil may require removal and stockpiling to enable workover operations to prevent soil compaction and mixing of material. If the interim reclaimed area is disturbed it shall again be reclaimed, as previously described.

● **Reclamation (43 CFR 3162.3-4, CFR3162.6 (d), Onshore Order #2)**

Final well reclamation: According to regulations, a well site is to be reclaimed and re-vegetated directly following plugging. The BLM-SJRA stipulates that surface reclamation be completed within 180 days of the final plugging operation. The final reclamation shall include all equipment and trash removal, slash piles chipped and scattered, pits, mouse hole, rat hole and boreholes filled, gravel removed, an identifying above ground marker erected (designating lease operator, lease number, API #, well name and number, plugging date) contoured to approximate original terrain as closely as possible, top soil evenly redistributed, soil prepared, weed control exercised, and soil seeded with a BIA approved seed mix which shall be monitored for growth. **The Bureau of Land Management, SJPLC (970.385.1370) shall be notified at least 48 hours prior to commencement of surface reclamation. The BIA-SU Agency shall be contacted prior to surface reclamation procedures for specific requirements and seed mixtures.**

◆ **MINERAL OIL,**

Polymer additives, Saline Frac fluids or other non-fresh water based fluids stored on site to facilitate horizontal drilling/frac operations shall have 150% containment dikes covered by 35 mil minimum thickness impermeable barrier surrounding and beneath Storage Tanks to protect against potential spills. Any brine muds and liner placed within a temporary cuttings pit shall be contained by impervious minimum 35 mil liner and disposed of off reservation at an approved site.

◆ **NOISE (SUIT FEIS 4.1.12.1):**

Mitigation as muffling, sound barriers, enclosures, alternative gas-lift mechanisms and topography shall be implemented as necessary on a case by case basis to bring into county standards compliance and to address specific annoyance complaints.

◆ **NOXIOUS WEEDS (SUIT FEIS 4.3.1.8):** on permitted lands areas shall be controlled for the life of the project.

◆ **PAD (WELL PAD) (SUIT FEIS Sec 4.1.5)**

Well site equipment shall be placed so that any production tanks are located close to the access road/pad junction and other facilities are clustered to enable maximum interim reclamation contraction of the well pad.

● **PAD/ACCESS/PIPELINE MITIGATION (SUIT FEIS Sec 4.1.5)**

Allow proper drainage to keep runoff precipitation from entering the well pad. **The pad shall be designed with a slope emitting stormwater through a rock rundown trough passing through a temporary breach in the peripheral level pad dike (on all fill slopes).**

● Access roads shall be bladed, crowned and ditched with appropriate minimum 18” culverts as needed and BMP erosion controls in place if well is successful. Roads shall be ditched on the high side with storm water runoff directed to existing drainages below the road through armored inlet and outlet culverts at flow line or suitably constructed Low Water Crossings. **All access roadways shall be constructed at an elevation higher than surrounding terrain. Adequate borrow ditches shall be constructed along the sides of the roads to facilitate storm water run-off. Culverts shall be placed at regular intervals where needed to allow water to cross the roadway and enter the existing drainages.**

- Operator may use spoils to construct mandatory earthen dikes on the top of “fill” slopes of pad.
- On pipeline ROWs, excavated topsoil shall be segregated from spoils. Upon backfilling, topsoil shall be placed on top, soils stabilized, prepared and seeded. Below applies as applicable:
 1. All pipes shall be buried at a safe depth below existing culverts and 30” below scour line of arroyos.
 2. Repair/replace all existing culverts removed to bury pipeline, armor inlets and outlets
 7. Replace all borrow ditches impacted by construction.
 8. Pipeline fill shall be compacted, mounded for settlement and finally seeded with a BIA /landowner specified seed mix.

● **Lined pits:** All pits shall employ a 24 mil (35 mil liner for Saline muds) or heavier non-permeable fabric with any seams aligned vertically and having adequate bedding material to prevent potential puncturing by sharp rocks. A 2’ berm shall encompass all reserve pits or cuttings trenches and be positioned above the impervious liner edges.

● **Workover**

Any subsequent completions involving the drilling of a new lateral segment or other workover **necessitating the use of a reserve pit or workover pit** shall meet the requirements stipulated for a new well reserve pit. The pit floor shall be in undisturbed cut materials several feet above the ground water table, lined with an impermeable fabric of 12 mil or greater, diked, fenced, have fluids covered with bird netting and ultimately reclaimed within 180 days with fluids removed or solidified and fabric cut at mud line prior to back filling with 3’ of clean soils.

◆ **SURFACE WATER- (SUIT FEIS Sec 4.5.2.8)**

● **DEWATERING OF RESERVE PITS**

The operator is prohibited from using mechanically-aided evaporation techniques which involve the use of misters and/or sprayers to enhance removal of reserve pit fluids. On SUIT lands non saline cuttings may be buried with liner cut at solids level. On Fee lands cuttings that meet state standards may be buried without liner.

● **Closed loop drilling system** without reserve pit: *A self-contained Drilling System is approved by BLM for this well. The self-contained mud system shall employ a rig-associated mud tank and a steel bin or properly constructed drying beds with minimum 24 mil (35 mil saline cuttings) impermeable barrier beneath cuttings and covering the circumferential collection troughs for removal of entrained water and extending over the retaining dike for collection of cuttings which shall be hauled off- reservation to an approved disposal site.*

● **Cuttings with >15,000 PPM Chloride or 10,000 PPM TPH must be removed from the Reservation and disposed of at an approved site. If cuttings are washed and centrifuged and tested at below Colorado State 910-1 table concentrations burial may be allowed on location with approval of a sundry notice to that effect submitted to the BLM.**

● **Self-contained mud systems using a cuttings trench:** In the use of a cuttings trench, top soil/ spoils shall not be stored directly above a cuttings storage area *but may be positioned along cut pad edges or at grade level.* A ditch to carry potential stormwater shall be constructed at the toe of cut slope between that slope and any diked “cuttings storage area” or cuttings trench to carry stormwater to grade off the pad over an armored area. *Upon completion of drilling operations, the cuttings shall be kept covered with trench reclaimed as soon as confirmed Dry.*

During drilling operations a “temporary cuttings storage area” must be lined with a minimum 24 mil impermeable liner to allow integrity while moving cuttings or minimum 35 mil liner when saline >15,000 Chloride or >10,000PPM TPH) cuttings are involved. The Drying bed must be surrounded with a

sufficient retaining dike whether the cuttings are held in a lined trench, a lined “drying bed” with side water collection channels inside the berm, or against an earthen bank to decelerate foam cuttings above an excavated lined trench at the toe of the cuttings pile to collect fluids collected in the lined storage trench. Only dry cuttings and cement may be stored in the cuttings storage area. Any cement wash or other fluids shall not be mixed with dry cuttings, but must be placed in a self-contained tank and removed for disposal at an approved location off-reservation. Any free liquid accumulating shall be vacuumed off consistently and removed to an approved facility.

On FEE lands (Alternatively, cuttings may be sampled for compliance with COGCC pit closure standards (Table 910-1). If all results meet closure standards, and are approved by the authorized officer via Sundry Notice 3160-5, the dry cuttings and cement may be buried in an unlined trench, located in cut material.) The cuttings trench shall be maintained with 3’ of free board & covered with a minimum of three (3) feet of clean compacted backfill material during interim reclamation. *If the sampling option is exercised, laboratory reports showing compliance shall be submitted to the BLM.*

• **Temporary slopes greater than 3:1** shall not exceed 2:1. **All pad fill slopes** shall be lined with continuous excelsior wattles at the top of fill slopes inside of a shallow (minimum 6-8”) ridge (dike) at the top of slope (or excelsior alone on graveled pads with secondary dikes around rig and tanks with spill potential) and excelsior wattles properly staked at the base of fill slopes to retain potential spills on location while drilling, to divert storm water away from the pad through a lowest elevation rock rundown to prevent sediment losses & shall have slope stabilization as needed. A ditch and dike shall be required at the top of cut slopes to prevent precipitation from entering the well pad. Long term temporary slopes shall be seeded. Construction slopes of 2:1 may be employed with reclamation to 3:1 upon interim reclamation. If of longer duration than 2 months “construction slopes” of 2:1 or steeper shall be stabilized with mechanically bonded fiber Matrix and seeded.

• **Permanent pad slopes shall not exceed 3:1.** The **trough and minimal dike at the top edge of the fill slopes shall be lined with continuous securely staked excelsior wattles during well drilling & construction** and remain at the toe of fill slopes if needed to stabilize soil. This shall be maintained until vegetation growth stabilizes the fill slope. During interim reclamation the temporary stabilization and ditch/dike at the top of the fill slope may be removed as the pad is contoured to mimic surrounding terrain. Erosion inhibiting material as geo-textile matting, blankets, hydro-mulching, mechanically bonded fiber matrix, rip-rap (as required) and timely seeding with a BIA/landowner specified seed mix shall be applied as soon as pad construction is completed.

• A correctly installed silt fence or a continuous line of excelsior wattles (or similar retention device) shall be installed at the toe of “top soil” and “spoils storage” piles to prevent loss of soils. All disturbed slopes shall be seeded and stabilized. **Topsoil should be placed on top of undisturbed soil. If topsoil is placed on top of gravel it must be placed on a layer of straw or other separation device so as not to mix gravel with topsoil.**

• **STORMWATER** a Storm Water Pollution Prevention Plan (SWPPP) is requested by the State of Colorado when proposing any ground disturbing activities of one (1) acre or greater.

• **Disposal of PRODUCED WATER: Onshore #7**

Shall not be stored in lined or unlined earthen pits but may be stored in steel tanks and disposed of at an approved site or piped to an approved water disposal well.

* **Submit Sundry Notice of Intent to BLM for approval to dispose of water** at an approved disposal site within 90 days. Include items: (1) From: (Well name), (2) Legal Loc, (3) API#, (4) Lease, (5) Fm, (6) Off Lease disposal well site? (a ROW is required from BIA), TO: (7) Inj well name, (8) UIC#, (9) Legal location of water disposal well.

◆**TES SPECIES (SUIT FEIS 4.3.3.9):**

If any TES species are identified during well construction or operation, the SUIT and the BIA shall be contacted immediately. Operations that would adversely affect the TES species must be discontinued until consultation with the USFWS indicates that the impacts are deemed “Not Likely to Effect”.

TES SPECIES (Attachment #2 to Decision record of PEA)

•No disturbance shall take place within 20 meters of federally **listed plant** occupied habitat. Any disturbance proposed within 200 meters of listed plants occupied habitat shall be analyzed in separate site specific consultation with the SUIT and the USFWS.

•Pre-construction surveys shall be conducted of proposed well pad and access route locations for **Gunnison prairie dogs**. Direct impacts to prairie dog colonies shall be avoided where possible and in the light of other resource tradeoffs resulting from access road and well pad relocation.

◆**VISUAL RESOURCE MANAGEMENT: (SUIT FEIS 4.9.8)**

All static equipment shall be painted a non reflective environmental green color within seven (7) days of completion of construction as weather permits. The color shall be one shade darker than **background** vegetation (as “Beetle” Green) and may be selected by consulting the BLM Standard Environmental Colors Chart CC-001: June 2008.

◆**WILDLIFE (SUIT FEIS 4.3.3.9):**

Avian species as birds and bats shall be protected from the enticement of warm vent stacks by wire grid or cone covers. Following well drilling during the liquid drying stage for reserve pits, **all pits** shall be fully fenced with bird netting suspended and maintained to protect migratory birds from potential hydrocarbons or toxic chemicals until reclamation is completed.

WILDLIFE (Attachment #2 to Decision record of PEA)

- Construction or other intrusive activities shall be prohibited within 0.5 miles from an **active raptor nest**.
- New well locations and ROWs must be a minimum of 0.25 miles from a raptor nest or winter roost.

◆**Bald and Golden Eagle Protection Act: Attachment #2 to Decision record of PEA**

If a construction project is planned during the **bald eagle nesting period (March 16-July 1)** and within 0.5 miles of suitable bald eagle nesting habitat, a pre-construction survey must be initiated by a qualified biologist within 10 days prior to the start of construction to verify the presence or absence of bald eagle nesting activity. (See attachment 2 for survey protocol & compliance requirements on results.)

◆**Bald and Golden Eagle Protection Act: (Attachment #2 to Decision record of PEA)**

If a construction project is planned during the **bald eagle winter roosting** period (November 15-March 15) and within 0.25 mile of a riparian zone with mature cottonwood trees, a pre-construction survey shall be initiated by a qualified biologist within 10 days prior to the start of construction to verify the presence or absence of bald eagle roosting activity. (See attachment 2 for survey protocol & compliance requirements

◆BALD EAGLE AVOIDANCE. Due to the presence of suitable winter roosting habitat for bald eagles at the project site, pre-construction surveys and construction monitoring will be required for any work between November 15 and March 15. Surveys must follow Southern Ute Tribal protocol, including pre-coordination with the Southern Ute Tribe/Wildlife Division. All surveying must be coordinated prior to construction with the Southern Ute Wildlife Division.

• **Migratory Bird Treaty Act: (Attachment #2 to Decision record of PEA)**

If construction is to occur during Migratory bird breeding season (March through August) a survey for Migratory birds shall be made just prior to construction with activities avoiding nesting/fledgling individuals discovered. The least amount of trench shall be left open overnight and escape routes from

trenches provided for wildlife per USFWS recommendation (3/16/2004 letter) in consultation # 2-22-04-I-362.

- **Migratory Bird Treaty Act: (Attachment #2 to Decision record of PEA)**
- No surface disturbing activities disturbance shall take place within 200 meters of known or discovered occupied **Southwest willow flycatcher** breeding habitat May 1 – August 15.

APPENDIX F

SITE CHARACTERIZATION

750-00-1094

On FEE Surface Acreage tapping SUIT & Fee Minerals.

Location of Proposed Action:

WELL SITE: *S.E. Bayfield 34-7; 12U-3A*

SURFACE: Surface: 2482' FNL, 477' FEL, Section 12U, T.S.34N., R7W. NMPM, La Plata County, Colorado

PRODUCTION ZONE: 1972' FNL, 844' FWL, Sec 12U, T.S.34N., R.7W., NMPM, La Plata County, Colorado

BOTTOM HOLE: 1980' FNL, 660' FEL, Sec 12U, T.S.34N., R.7W., NMPM, La Plata County, Colorado

ACCESS: New 2532.38'

PIPELINE: To be constructed at a length of 2447.23 to pad and 116.84' on pad.

Proposed Action Title/Type:

S. E. Bayfield 34-7; 12U-3A gas well, access and pipeline. This well would be a FC Formation 80A infill gas well on Fee (Houston Lasater) surface with new access. The access and pipeline R.O.W would be 40' wide combined and trend directly south from the Echols well access road Sta. 0+00. The R.O.W would extend through a gate and built 20' east of and parallel to a south trending fence. At the cross-fence junction at sta. 8+43.35 the road and pipeline would jog southwesterly through a combination of gates and trend southerly 20' west of and paralleling the same fence. At station 15+77.93 the road and pipeline would begin to arc south-westward to sta 19+75.01, then westerly to the well pad at sta. 25+32.38'. The proposed pipeline would accompany the road from Sta. 0+84.65 to the well pad (2447.73') and continue to the center stake.

Description of the Proposed Action:

The proposed actions are described in the Application for Permit to Drill. This action includes the construction of the *S.E. Bayfield 34-7; 3-12U-3A Fruitland* Formation gas well located at surface on undisturbed Fee (Lasater) lands. Construction and slope development zones would use a permitted area of 230 x 165' (0.97A). New disturbance would occur within the permitted area. The grassland pasture includes Alfalfa, Timothy, White clover, Field bindweed and Foxtail barley, with some sedges in irrigation ditches, Canada thistle, Plantiago and Curly doc. Irrigation ditches dissect the area and would be crossed several times. No culturally important species were noted. Canada thistle is a noxious weed found in sparse amounts on the proposed roadbed and should be controlled.

The proposed pad is located on the east flank of and 50' eastward of Beaver Creek 14 miles north of the New Mexico/Colorado state line and 1 mile east of CR 521 (Buck Highway). The well pad is on a shallow south-east facing exposure. Due to the proximity of Beaver Creek all cuttings and any saline muds used in the horizontal wellbore section will be hauled off location to an approved site.

The proposed pad would be on Fee surface lands also used for pipeline and road 40' R.O.W. Fence crossings would require the re-establishment of gates per landowner discretion to be worked out with the operator.

Interim reclamation to the well-bore anchors with a graveled pull through would be performed directly following the well completion. Final reclamation would occur at the end of the useful life of the well and would involve removal of equipment and trash, contouring to original landform, preparation of soils and reseeding with a landowner-approved seed mixture.

Cultural surveys performed and recent biological surveys indicated that no cultural resources of consequence would be disturbed and that no Threatened, Endangered, or Sensitive species or critical habitat would be adversely affected. No taking of migratory birds is anticipated. "On-site" documentation is attached to the BLM copy of this document in Appendix D and is available at the San Juan Public Lands Center BLM office.

OWNERSHIP	20' ACCESS	40' PIPELINE	Access with Pipeline	PAD	TOTAL ACRES
S.E Bayfield 34-7-12U-3A	84.65 .04A	On pad 116.84'	2447.73 2.25A	165'x230' 0.95A	New Dist 3.24A

APPENDIX G-MAPS

